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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,927	01/25/2006	Thomas Bowker	STADM-71279	8585

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FULWIDER PATTON LLP
HOWARD HUGHES CENTER
6060 CENTER DRIVE, TENTH FLOOR
LOS ANGELES, CA 90045

EXAMINER

SMITH, CHAD

ART UNIT	PAPER NUMBER
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2874

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	10/537,927		BOWKER ET AL.	
	Examiner		Art Unit	
	Chad H. Smith		2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/7/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1 – 10, 13 – 21, and 23 – 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Crawley et al. (U.S. Patent # 6,442,304 B1).

2. Regarding claim 1, Crawley et al. teaches in figure 22 an optical fiber assembly capable of deployment down an instrumentation tube located in a well bore, comprising: a flexible tube (col. 17, line 41, col. 14, lines 20 – 22, item 227, fig. 22) having a lumen (a bore in the flexible tube) surrounded by a wall, the lumen having an inner diameter, the flexible tube also having an outer diameter smaller than an inner diameter of the instrumentation tube (col. 17, line 38, item 221, fig. 22); and an optical fiber having a core portion (col. 17, line 39, item 223, fig. 22) and a cladding portion (col. 17, line 40, item 224, fig. 22) disposed within the flexible tube, the optical fiber (223, 224) having an outer diameter smaller than an inner diameter of the lumen of the flexible tube (227) (fig. 22).

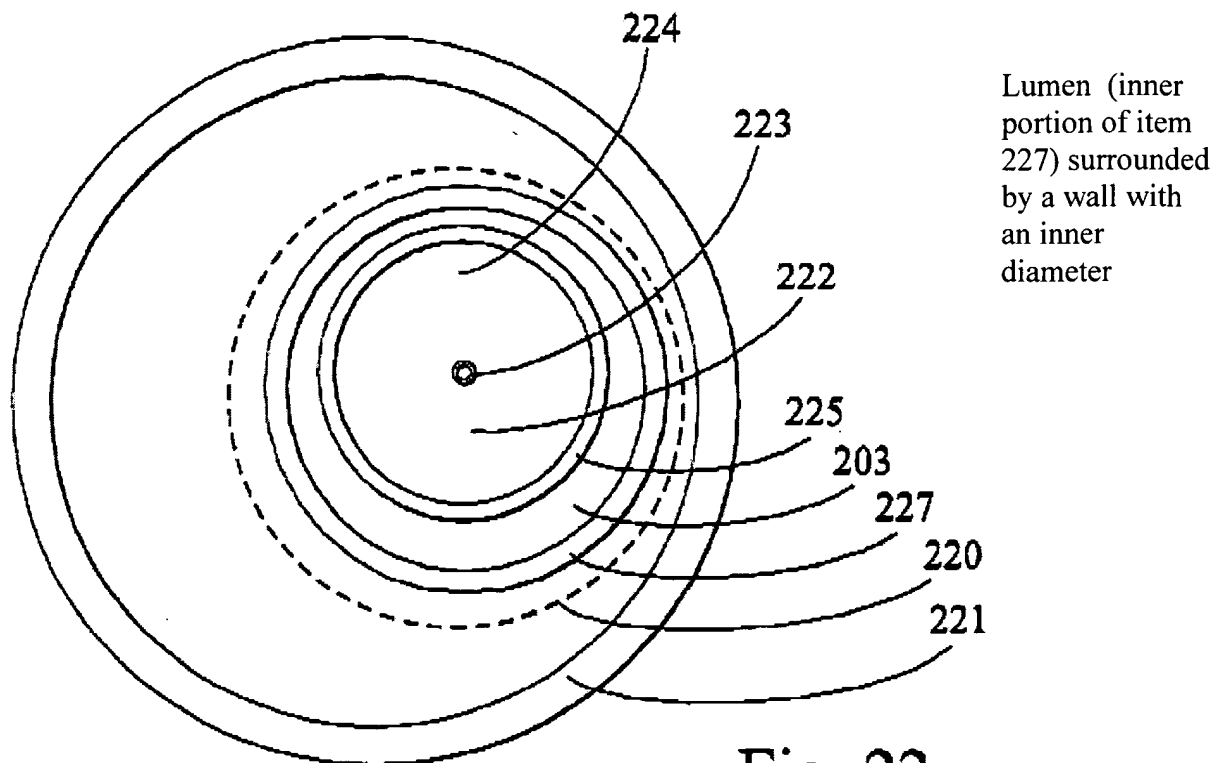


Fig. 22

3. Regarding claim 2, Crawley et al. teaches wherein the flexible tube is hermetically sealed (col. 7, lines 36 – 47, col. 16, lines 29 – 32, col. 17, 11 – 18, fig. 22).

4. Regarding claim 3, Crawley et al. teaches wherein the flexible tube is filled with a hydrogen scavenging material (item 203, fig. 22, col. 17, lines 11 – 12, and 40 – 41).

5. Regarding claim 4, Crawley et al. teaches coating applied to an outer surface of the flexible tube for preventing permeation of fluid or gas through the wall of the flexible tube (col. 16, lines 29 – 32, col. 17, lines 11 – 18).

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6. Regarding claim 5, Crawley et al. teaches wherein the coating is a material that reacts with hydrogen (col. 17, lines 12 – 18).

7. Regarding claim 6, Crawley et al. teaches wherein the inner wall of flex tube is coated with hydrogen scavenging material (item 203, fig. 22, col. 17, lines 11 – 12, lines 40 - 41).

8. Regarding claim 7, Crawley et al. teaches an optical fiber suitable for deployment in a harsh environment, comprising: an optical fiber having core portion and a cladding portion (col. 17, lines 39 – 40); and a flexible barrier material disposed about an outer diameter of the optical fiber for protecting the optical fiber from the harsh environment (fig. 22, item 227, col. 17, line 41).

9. Regarding claim 8, Crawley et al. teaches wherein the flexible barrier is a thin tubing (col. 15, lines 24 – 28).

10. Regarding claim 9, Crawley et al. teaches wherein the flexible barrier encases the optical fiber, core portion and the cladding portion (col. 17, lines 36 – 41, fig. 22, item 227).

11. Regarding claim 10, Crawley et al. teaches wherein the flexible barrier is made of a material that prevents the transmission of water vapor or gas from the well in the fiber (PTFE, (Teflon), col. 7, lines 39 – 40, col. 14, lines 20 – 25, col. 15, lines 24 – 33).

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12. Regarding claim 13, Crawley et al. teaches wherein the flexible barrier member further includes a drag enhancer attached to the flexible barrier, wherein the drag enhancer provides resistance to the flow of the optical fiber assembly during deployment (col. 7, lines 64 – 67, col. 8, lines 1 – 7).

13. Regarding claim 14, Crawley et al. teaches wherein the flexible barrier is hermetically sealed (col. 7, lines 36 – 47, col. 16, lines 29 – 32, col. 17, 11 – 18, fig. 22).

14. Regarding claim 15, Crawley et al. teaches wherein the flexible barrier (container, capillary) further includes a hydrogen scavenging material (col. 7, lines 32 – 35, col. 8, lines 23 – 25).

15. Regarding claim 16, Crawley et al. teaches wherein the flexible barrier includes coating applied to an outer surface of the flexible barrier for preventing permeation of fluid or gas through the wall of the flexible barrier (col. 7, lines 36 – 47).

16. Regarding claim 17, Crawley et al. teaches wherein the coating is a material that reacts with hydrogen to form a molecule that cannot permeate the wall of the flexible barrier tube (col. 7, lines 43 – 46, as the spec in par. 0014 of PG Pub. # 2006/0153508 A1 discloses that carbon is a suitable coating for gettering hydrogen).

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17. Regarding claim 18, Crawley et al. teaches a method of deploying an optical fiber down a well bore (col. 6, lines 31 – 32), comprising: disposing an optical fiber having a core and a cladding (col. 17, lines 39 – 40) surrounded by a flexible protective means into the lumen of a tube disposed within the well bore (col. 17, line 41, col. 14, lines 20 – 22, item 227, fig. 22); pumping a fluid under high pressure into the lumen of the tube disposed within the well bore, the pumped fluid acting on the optical fiber to drag the optical fiber down the well bore (col. 12, lines 55 – 60).

18. Regarding claim 19, Crawley et al. teaches wherein the optical fiber includes a drag enhancer disposed at a distal end of the optical fiber (col. 12, lines 55 – 60).

19. Regarding claim 20, Crawley et al. teaches wherein the flexible protective means is a hermetically sealed tube (col. 7, lines 36 – 47, col. 16, lines 29 – 32, col. 17, 11 – 18, fig. 22).

20. Regarding claim 21, an optical fiber assembly for deployment down a capillary tube located in a well bore, comprising: an optical fiber having a core portion and a cladding portion (col. 17, lines 39 – 40); a flexible protective tube having an outside surface and an inside surface (fig. 22, item 227) the inside surface encasing the optical fiber, the flexible tube being hermetically sealed (col. 7, lines 36 – 47, col. 15, line 30 – 34, col. 16, lines 29 – 32, col. 17, 11 – 18, fig. 22); and a hydrogen scavenging material applied to the inside surface of the flexible tube for preventing permeation of fluid or gas through the flexible tube (col. 7, lines 32 – 35, col. 8, lines 23 – 25).

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21. Regarding claim 23, Crawley et al. teaches wherein the flexible tubing is formed by applying a coating to an outer surface of the optical fiber (col. 7, lines 38 – 39).

22. Regarding claim 24, Crawley et al. teaches wherein the coating material reacts with hydrogen (col. 7, 38 – 39).

23. Regarding claim 25, Crawley et al. teaches wherein the optical fiber has a distal end having a drag enhancer mounted thereto (col. 12, lines 55 – 60).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawley et al. (U.S. Patent # 6,442,304 B1) in view of Schultz et al. (U.S. Patent # 5,493,626).

25. The cited primary reference substantially teaches the basic claimed optical fiber assembly as discussed in claim 10 above.

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26. The cited primary reference does not teach wherein the flexible barrier is made of stainless steel.

27. The added secondary reference teaches a protective sheath surrounding the optical fiber that is composed of stainless steel so as to provide a fluid seal that can be laser welded so as not to overheat the contents of the cable assembly (col. 6, lines 3 – 9).

28. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the optical fiber assembly taught by Crowley et al. with Schultz et al.'s teaching of using stainless steel as a flexible barrier steel so as to provide a fluid seal that can be laser welded so as not to overheat the contents of the cable assembly.

29. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crowley et al. (U.S. Patent # 6,442,304 B1) in view of Randazzo (U.S. Patent # 4,687,293).

30. The cited primary reference substantially teaches the basic claimed optical fiber assembly as discussed in claim 10 above.

31. The cited primary reference does not teach wherein the flexible barrier is made of nickel steel.

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32. The added secondary reference teaches using a metal sheath composed of a stainless steel containing a high concentration of nickel so as to surround the optical fiber and protect it from acidic environments (col. 5, lines 11 – 15).

33. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Crawley et al.'s optical fiber assembly for deployment in a harsh environment with Randazzo's teaching of teaches using a metal sheath composed of a stainless steel containing a high concentration of nickel so as to surround the optical fiber and protect it from acidic environments.

34. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawley et al. (U.S. Patent # 6,442,304 B1) in view of Anelli et al. (U.S. Patent # 4,725,122).

35. The cited primary reference substantially teaches the basic claimed optical fiber assembly as discussed in claim 21 above.

36. The cited primary reference does not teach wherein the hydrogen scavenging material is applied on the outside surface of the flexible tube.

37. The added secondary reference teaches a tape forming a wrapping around a fiber that contains on its outer surface of a mixture of palladium for reacting with hydrogen so as not to have to increase the dimensions of the fiber for compensation of hydrogen degradation.

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38. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Crawley et al.'s optical fiber assembly with Anelli et al.'s tape wrapped around a fiber with palladium as a hydrogen scavenger applied to the outside surface so as not to have to increase the dimensions of the fiber for compensation of hydrogen degradation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad H. Smith whose telephone number is (571) 270-1294. The examiner can normally be reached on Monday-Thursday 7:30a.m. - 5:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-270-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CHS



SUNG PAK
PRIMARY EXAMINER